The Canadian Entomologist.

VOL. VIII. LONDON, ONT., MARCH, 1876. No. 3

NOTES ON ENTOMOLOGICAL NOMENCLATURE.

Part I.

BY W. H. EDWARDS, COALBURGH, W. VA.

My attention having recently been drawn to the "Historical Sketch of the Generic Names Proposed for Butterflies, a Contribution to Systematic Nomenclature, by S. H. Scudder, Salem, 1875," in which some hundreds of names have for the first time been advanced, I was led to investigate for myself the sources whence part of them were derived, especially the works of Hübner. And the conclusion to which I have come respecting many of these newly proclaimed genera being directly the reverse of that of the author of the Sketch, I desire to state the case for the consideration of the readers of the ENTOMOLOGIST, who may naturally be supposed to feel an interest in whatever concerns any branch of Entomological nomenclature.

1. I have before me what purports to be a fac-simile of Hübner's Tentamen, "reprinted by Samuel H. Scudder, Cambridge, U. S. A., 1873." It comprises a single leaf, without date, the printed matter measuring 7 x 9 inches, and covering both sides of the leaf; and is entitled Tentamen determinationis digestionis atque denominationis singularum stirpium Lepidopterorum, peritis ad inspiciendum et dijudicandum communicatum, a Jacopo Hübner. An Attempt at Classification of the several groups of the Lepidoptera, communicated to skilled persons to be examined and pronounced upon.

In this Attempt, the Lepidoptera of all orders are divided into Phalanxes, Tribes, and a farther division not named, but which, from the analogous arrangement in the Verzeichniss bekannter Schmetterlinge, are Stirps; and so far as relates to the Butterflies, the classification is as follows:

Phalanx I. PAPILIONES.

Tribus I. Nymphales.

I. Nereïdes—Nereïs Polymnia.
II. Limnades—Limnas Chrysippus.
III. Lemoniades—Lemonias Maturna.
IV. Dryades—Dryas Paphia.
V. Hamadryades—Hamadryas Io.
VI. Najades—Najas Populi.
VII. Potamides—Potamis Iris.
VIII. Oreades—Oreas Proserpina.

Tribus II. Gentiles.

I. Rustici—Rusticus Argus.
II. Principes—Princeps Machaon.
III. Mancipia—Mancipium Brassicae.
IV. Consules—Consul Fabius.
V. Urbani—Urbanus Malvae.

At the end of the paper we read: Ne expectet quis, ordinem hanc nullam amplius correctionem esse desideratum. Let no one suppose that this arrangement will require no farther correction. Hübner did his own printing and this leaf was for his own use and for certain of his learned friends to examine and give him their opinions upon. He gives the following account of the origin of the Tentamen in the Preface to the Verzeichniss bek. Schmett.: "Though many systematic works upon the Lepidoptera have already appeared, yet none exists wherein all the known species are properly classified. This circumstance compelled me, ten years ago, when I began to extend my works from European to exotic species, to *sketch for myself a systematic Catalogue* of those various species, in order to be able to begin my contemplated Sammlung Exot. Schmetterlinge. *This Sketch I immediately printed under the title Tentamen, &c., in order that it might be examined and judged of by competent persons before I adopted it.*"

In Silbermann's Revue Ent. 1833, T. 1, p. 101, is given by M. Geyer, who was assistant to Hübner in his publishing from 1818 to 1833, and who continued the works of Hübner after the death of that author, a list of Hübner's works, as follows:

1. Geschickte Europ. Schmetterlinge.
2. Sammlung Europ. "
3. Sammlung Exot. "

4. Zutraege zur Sam'l. Exot. Schmett.
5. Verzeichniss bekannter Schmetterlinge.
6. Systemat. Alph. Verzeichniss zur Samml. Europ. Schmett.

Of these, No. 3, begun 1806, was continued to 1833 by Geyer.

Vol. 1, 413 pl., title, Index, and 12 pages text.

Vol. 2, 225 pl., title, Index.

Vol. 3, 21 pl.

Of No. 4, begun 1818, continued to 1833, were published Vols. 1, 2, 3 and 34 pl. of iv., but without text. No mention is made in Geyer's list of the Tentamen.

In Thon's Entom. Archiv., Jena, July, 1827, Vol. 1, p. 28—30, Geyer has given a biographical sketch of Hübner, in which he states that Hübner was first a designer in a cotton factory near the Moldavian frontier; was entirely self-taught, but studied the Lepidoptera diligently. That Geyer became acquainted with him and worked with him from 1818 onward, and he continues thus: "but as in the beginning Hübner felt the necessity of a natural system to be able to give accurately the limits of all groups of the Lepidoptera, he printed a *provisional sketch* after the principles of Linné, Fabricius and Schiffermueller, *on a quarto sheet, which later was enlarged and published with the title Verzeichniss bekanter Schmetterlinge*, 1816, 8vo. *What he believed erroneous in this work* (Verzeichniss) *he tried to amend in his Lepid. Zutraege*," published 1820. Geyer then gives a list of Hübner's works, same as that given in the Rev. Ent. before cited, and makes no mention therein of the Tentamen. Mr. Scudder, Hist. Sketch, p. 98, speaking of the Tentamen, says: "It is also included by Geyer in his list of Hübner's works." What Geyer says we have seen. The Tentamen is included in neither of his lists of Hübner's works, but apart from the list, in Thon's Archiv., a "provisional sketch," not even specified as the Tentamen, is stated to have been made, which later *was published as the Verzeichniss.* The very word used by both Geyer and Hübner—a sketch—implies incompleteness, and means a rough draft, an outline, and cannot possibly be construed to mean a "work," which is a completed structure, and in this case a completed book. Dr. Hagen calls my attention to the fact that Geyer's words, as well as Hübner's own in the Preface to the Verz., (er machte bekannt.) to-day mean *published*, but that formerly they were applied to any printed slip, *and as used by Hübner and Geyer are equivalent to "printed,"* as I have translated them. The difference between printing and publishing I need not dilate upon.

Such, then, is the history of this now celebrated sheet, printed in 1806 by Hübner as a Sketch, or rough draft, for his own use and for the examination of some learned persons, expressly stated by him to have been subject to their approval *before even he himself would embrace it*, never known to have been approved by any one, never claimed to have been more than a "provisional sketch" or draft of the book which in 1816 was published as the Verzeichniss, and which differs materially from the draft, as would any completed and published book or paper from the original draft of same, discovered by Mr. Scudder seventy years after it was printed and nearly as many after it had been forgotten, and proclaimed by him as an authority in nomenclature, not only over the Verzeichniss, which is its other self, but over all works of Hübner, and all works of all authors since 1806, superseding—wiping out as with a sponge—the labors of three generations of Entomologists. And plainly, if this little Sketch can claim of right such prodigious distinction, the nomenclature of every department of Natural Science is at the mercy of any leaf or printed slip which may hereafter be discovered in the attics or the junk-shops of the civilized world. It becomes us therefore to scrutinize this sheet closely.

Mr. Scudder relies upon the mention of the Tentamen in the Verzeichniss, and upon a reference to what is understood to be the Tentamen in the preface to the Lepid. Zutraege, but in which the name or the title does not appear; also to a reference by Ochsenheimer, and later by Dr. Hagen in the Bibliotheca Entomologica, 1862, as evidence that it was known to Entomologists for years as an existing work, *and by implication that it was recognized as a work having authority.*

Hübner's own references, whether direct or indirect, proved nothing, and as to that in the Biblioth. Ent., Dr. Hagen informs me that when he mentioned the Tentamen in that work, he had never seen it, and knew it only from Ochsenheimer's mention, and now that he has seen it, he is explicit in his rejection of it as having either authority or value.

Ochsenheimer, Schmett. Eur. iv, 1816, says: "Hübner has under the title Tentamen, &c., published on a quarto sheet a sketch of a system of Lepidoptera, in which to the divisions adopted by him are given generic names of unequal value. Hubner seems to be aware of this himself, for he says in concluding, 'let no one suppose that this arrangement will require no farther correction.' *This sheet I saw only long after the printing of my 3rd Vol. was done.*" This was then after 1816, as

Ochsenheimer's 3rd Vol. bears date that year. Mr. Scudder has inadvertently copied this as 1st Vol., 1807, instead of 3rd Vol., 1816. So as Dr. Hagen, in a note, says, "the Tentamen was not known to the chief Lepidopterologist of his day for ten years or more after it was printed, though he was in intimate communication with Hubner, and that he did not know it shows clearly that Hubner did not think it of importance enough to be communicated to him."

Herrich-Schaeffer, in different Regensburg pamphlets, 1857–1869, states that he has bought all the plates, books and scientific material belonging to Hubner, and will continue Hubner's works. He gives a list of them, with dates of their original publication, and includes the Verzeichniss bek. Schmett., and the Syst. Alph. Verz. (which is another catalogue), but says not a word of the Tentamen, the best proof that he did not regard it as a scientific publication.

Dr. A. Speyer, Ent. Zeit. Stett., 1875, Vol. 36, p. 98, thus expresses himself: "Grote swears by the priority principle and has vigorously carried out the same, not only in regard to species, but to genera and higher divisions. He has laid hold of a yet older catalogue of Hubner's than the Verzeichniss in the Tentamen, &c. *I have never met with the Tentamen, which, according to Ochsenheimer, contains a plan of a system of Lepidoptera, on a quarto sheet, and neither I presume have most of my readers. I have therefore been obliged to pass no judgment on the right of those generic names to supersede later ones chosen by Hübner himself or by others.*"

"The Tentamen is not recorded in the large yearly Index of all German publications," as I am informed by Dr. Hagen, "published at Leipzig, which Index is regarded as the most correct existing." And the same distinguished Entomologist also assures me that he himself "has most of the catalogues of the libraries belonging to prominent Entomologists, and which have been offered for sale during the past forty years, *and the Tentamen is not mentioned in one of them*, not even in those of Zincken-Sommer, Charpentier and others who were contemporaries of Hubner and were prominent and accomplished Lepidopterologists. These men and Ochsenheimer and Germar were the '*peritis*' of their time and there is no evidence that one of them had seen it; and," adds Dr. Hagen, "*a work in nobody's hands, printed for private purposes, cannot be considered as a scientific publication.*"

So that this sheet, so far as appears, was known to German authors,

who of all the world might have been supposed likely to have been familiar with it if it ever had been published or had any scientific value, only by the mention of it in the Verzeichniss, of which it was the original sketch, or from the mention in Ochsenheimer, who says he did not know of it till after 1816, that is, till after the Verzeichniss was published, and through the mention in the preface of that work he probably got his first information about the Tentamen.

And it is worthy of notice that from 1806 to the present day, *scarcely one of the German lepidopterists have recognized any of Hübner's works as authoritative in nomenclature.* This movement in favor of Hubner originated in England with a small number of authors, and quite lately has been extended to the United States by the efforts of Messrs. Scudder and Grote.

In the year 1842, the British Association appointed a Committee composed of the most eminent zoologists of the day, to draw up and report a code of Rules "by which the nomenclature of zoology may be established on a uniform and permanent basis." The committee submitted to the Association a series of propositions that same year, 1842, which were adopted. In 1845, a Committee appointed by the Association of American Geologists and Naturalists, adopted the rules of the British Ass'n with slight alteration.

Rule 12 reads as follows: "*A name which has never been clearly defined in some published work should be changed for the earliest name by which the object shall have been so defined.*" And in the explanatory text accompanying, the Committee of the Br. Ass'n say: "Two things are necessary before a zoological term can acquire any authority—*definition* and *publication. Definition properly implies a distinct exposition of essential characters, and in all cases we conceive this to be indispensable. To constitute publication nothing short of the mention of the above particulars in a printed book is sufficient to authenticate a genus. . . . . Nor can any unpublished description, however exact, claim any right of priority till published, and then only from the date of publication.*" In a printed book! Not on a stray slip nor on a loose sheet, nor in the columns of a newspaper, but in a book, that its permanence may be assured and that it may be known of by all men.

Geyer says that Hubner published his provisional sketch in an enlarged form as the Verzeichniss; and Hubner says "let no one suppose that this arrangement will need no farther correction." And accordingly we

see that Hubner does not use the names of the 13 secondary divisions of the Papiliones of the Tentamen at all in the Verzeichniss. The species *Polymnia*, for instance, stands in the former as "*Nereis Polymnia*;" in the latter it is *Mechanitis Polymnia; Potamis Iris* is changed to *Apatura Iris*, and so on through the entire list. And only a part of the Stirps of the Tentamen are retained in the Verzeichniss, five of them, namely, all the Gentiles, being changed for others, as *Principes* to *Archontes*, &c. Moreover, one Stirpsin addition is given to each Tribe.

Yet the author of the Sketch, in disregard of Rule 12, has given the names of these 13 secondary divisions of the Tentamen as so many names of genera, crediting them to Hub., 1806. Thus *Nereis* Hub., 1806; *Consul* Hub., &c., adding to each the species accompanying it in the Tentamen, with the words "sole species and therefore type." These names have never been used, and several were dropped by Hubner himself, but the systematist of to-day must *reinstate* them, as he terms it, as if they had ever had one moment's standing, and claims for them an honest priority over the labors of other men. And not only has Mr. Scudder given a set of names based upon these divisions of the Tentamen, *but a complete set of other names for the equivalent divisions of the Verzeichniss.* Thus Hubner, as I have said, changed all the Stirps of the Gentiles, *Principes* into *Archontes*, *Rustici* into *Astyci*, &c., and we have in the Hist. Sketch a genus *Princeps* and a genus *Archontes*, a *Rusticus* and an *Astycus*, each pair in Hubner standing for precisely the same thing. But apparently to escape the appearance of their duplication, the last set are attributed to "Franck's Catalogue," a production much subsequent to the Verzeichniss and of which I will speak presently.

But to return to the Tentamen. In the Hist. Sketch we read "*Potamis* Hub. Tent., 1806; *Iris* sole species and therefore type. This name never since used must be restored." "See *Apatura*." Turning over the leaves we find "*Apatura* Fab." and three species ranged under it, *Iris*, *Bolina* and *Alimena*, and read: "in 1806 Hubner (Tent.) selected *Iris as type of Potamis. Consequently Apatura must be restricted to the other two, which are congeneric, and Bolina may be taken as the type. This, however, is not in accordance with subsequent usage* (from 1806), *as will be seen by the following*," &c. And then are given a dozen authors, including Hubner himself in the Verzeichniss, nearly every one of whom has employed *Iris* as the type of *Apatura*. And Mr. Scudder adds with amusing naiveté, "this result is from want of familiarity with Hubner's Tentamen!"

Beyond a question, the Tentamen, though historically interesting, or as a curious fossil, has not the least value as an authority for nomenclature, and these 13 genera set up by Mr. Scudder must come down.

The other Phalanxes of the Tentamen, and which cover about 80 per cent. of that sheet, relate to the Heterocera, and I shall not say more of them at present than that they one and all are subject to the same fatal objection with the Papiliones; and any system of arrangement based upon these divisions is worthless.

2. In the year 1825, a certain collection of Lepidoptera owned by the late M. Franck was offered for sale by his widow, and Hubner was employed to draw up a sale catalogue, a copy of which, from the Mus. Comp. Zool. Camb., I have examined. It is entitled "Catalogue de feu M. Franck, cette collection est en vente chez Mme. Ve. Franck, a Strasbourg." Near the end is a classified list of all the species embraced in it, divided according to the Stirps of the Verzeichniss, merely the names and the habitat being given, as *Archon Polydamas* L. Brazil, *Astycus Proteus* L. Surinam. *Now these names are not generic names in this Catalogue unless the Stirps names in the Verzeichniss are also generic names.* They, as well as the Stirps names, are given to what modern systematists call a Family or sometimes a Sub-Family. For example, *Andropodum* in this Catalogue embraces 44 species, including all the modern genera of the Family or Sub-Family Pieridæ, as *Pieris*, *Anthocharis*, *Colias*, *Terias*, *Callidryas*, *Gonepteryx*; and it is identical with the Stirps *Andropodum* of the Verzeichniss. Under *Archon*, which is equivalent to Papilionidæ, stand *Papilio*, *Leptalis*, *Thais*, *Parnassius*, and so on. It is plain, therefore, that these names are in no sense names of genera. And yet Mr. Scudder has set up several of them as names of genera, being, as I have mentioned before, all those which Hubner substituted in the Verzeichniss for the names of the Tentamen. But instead of taking them directly from the Verzeichniss, he seems to have adopted a round-about method. On page 93 Hist. Sketch, he says: "Only those names" (of genera) "are introduced which are connected with the binomial nomenclature founded by Linné; for this reason the trinomials of Hubner" (such as *Oreas nubila Norina*, *Andropodum fugax Palaeno*, etc., astonishing appellations used in the iconographic works of Hubner) "and other writers have been totally disregarded. *All or nearly all the trinomials of Hübner are actually used by him in some work or other, in the Tentamen or Franck's Catalogue, with a binomial application, and in those cases they are here introduced, but only dating from the time at which*

and for the species for which they were employed binomially." Now, here is *Andropodum* in Franck's Catalogue, precisely the equivalent of *Mancipium* of the Tentamen (which latter is already set up as a genus in the Sketch and stamped Hüb., 1806), and is substituted for it in the Verzeichniss, employed to cover 44 species belonging to many genera. Mr. Scudder pounces at random on one of these, which happens to be *Ilaire*, and stands it up as type of the new-old genus *Andropodum* Hüb., 1825, not taking the trouble to first pull down *Mancipium*. I have not examined the Zutraege, and for aught I know there may be a third equivalent of *Mancipium* found there, which also is one of these genera. Geyer says that what Hübner thought erroneous in the Verzeichniss he tried to amend in the Zutraege, and he may not unreasonably have seen fit to amend his Stirps' names the second time. Certainly, had he done so, we should have triplicate genus names in the Hist. Sketch. For some reason not stated, Mr. Scudder has attributed the name *Archon* type *Machaon* to the Syst. Alph. Verz. 1825, instead of to Franck's Catalogue, 1825, where its compeers are found, in disregard of his own statement before quoted as to the use of the trinomials—for in the Syst. Alph. Verz. the species *Machaon* stands as *Archon heroicus Machaon*.

Of course Franck's sale Catalogue, as regards authority in nomenclature, does not differ from Deyrolle's (Paris) sale Catalogue, or that of any other professional dealer in insects. I have a catalogue of a dealer in flower seeds, from Ipswich, England, in which all the names are arranged under the latest approved botanical system, and accompanying each is a brief indication of the habit, color and nature of the plant. This catalogue would scarcely be allowed by Dr. Gray to have authority in botanical nomenclature, and yet it has as much claim to that dignity as this Franck Catalogue, and in fact more, as it gives some sort of description of each plant mentioned.

We may infer, then, that zoologists have not merely to rummage for drafts and printed slips, but for sale catalogues as well, before they can reach the right basis of their nomenclature!

In the Historical Sketch are about 40 other genera attributed to Hübner on such authority as Syst. Alph. Verz., Index, Sammlung, exclusive of a host based upon the coitus of the Verzeichniss bekannter Schmetterlinge, and these one and all will be found to bear examination no better than the so-called genera from the Tentamen and Franck's Catalogue. They all lack the essential qualities of genera, being taken

from works in which they stand as bare names, undefined and undescribed.

3. In the Preface to the Historical Sketch we naturally look for a statement of the plan upon which the author has worked, and the principles on which he relies for the correct exposition of generic names. And we read that he adopts in general—not the rules of the British Association—but those principles regarding genera enunciated by Agassiz, and more recently by Dr. Thorell in his work on European Spiders, "*with such exceptions and modifications as are indicated in my Canons of Systematic Nomenclature*" (published in Am. Jl. Sci. and Arts, May, 1872). Agassiz not being at hand, I turn to Thorell as quoted by Wallace, Anniv. Address, p. 10, and read: 1. "*There must be definition and description and publication. A recognizable figure of a species is sufficient, but of a genus there must be a description pointing out the generic characters.*" And Thorell adds: "*A new genus that has been distinguished merely by referring to some particular species of an older genus as its type, without in any way indicating which of the* CHARACTERISTICS OF THE SPECIES IS TO BE CONSIDERED AS THE MARK OF THE NEW GENUS, NO ONE CAN BE LOOKED UPON AS BOUND TO ACKNOWLEDGE. Nevertheless, it appears to me advisable to do so if the species referred to deviate in any generally known way from the typical species of the old genus, and always if the new genus has been once received and acknowledged." With the proposition laid down in the first part of this clause I fully agree, and it is in accord with the Rule of the Br. Ass'n. The last part is advisory, and taken with the other, means that while Dr. Thorell would concede a standing to genera already adopted and in use, he would require definition and description and publication in future, and would permit no genus to be based on a mere reference to a type, except in one extraordinary case, that of a well known variation from the typical species of the old genus. This advisory clause expresses an individual opinion and is propounded for the consideration of naturalists. But were it a law, it would afford scanty support to these new Hübnerian genera. There is no evidence that in any one of those taken from the Tentamen or from Franck's Catalogue, etc., the typical species designated by the author of the Hist. Sketch differs in any generally known manner from the remaining species of the old genus, and certainly these genera have not been received and acknowledged.

And what are the "exceptions and modifications" indicated in Mr. Scudder's Canons? Canon 3 reads: "The mere enumeration of its

members when known is a sufficient definition of the limits of a group and gives it an unquestionable right to recognition." That looks rather like a reversal of Dr. Thorell's Rule than a modification of it, and it is the foundation on which these late innovations rest. What right has any man to lay down a Rule or propound a Canon at variance with the received Code, and then assume that his Rule or Canon has the force of law? The Rules of the British Association were adopted by the representatives of the different branches of zoology, assembled in convention, and they have been accepted and acted upon. If any of them need modification or repeal, such change must proceed from as high an authority as that which enacted them. We may reverence or respect the opinions of an Agassiz, or a Thorell, or a Scudder, but in these matters to consider opinions as so many laws would be to establish a dangerous precedent, and cannot for one moment be tolerated.

Under another of these Canons Mr. Scudder has undertaken to apply the rule of priority to groups higher than genera, as follows: "In any subsequent alteration of the limits of a group its name must never be cancelled." And accordingly we are requested to introduce a host of barbarous family and stirps names, to the utter confusion of the received nomenclature of the higher groups. The Committee of the Br. Ass'n, on the contrary, not intending to apply the rule of priority to these groups, recommended "that the assemblages of genera termed families should be uniformly named by adding the termination *idæ* to the earliest known or most typically characterized genus in them, and that the subdivisions termed sub-families should be similarly constructed with the termination *inæ*." And this recommendation has been accepted and generally acted on because this mode of designating families and subfamilies, being uniform and an aid to memory, was found eminently convenient. It was regarded as a vast improvement on the fantastic and heterogenous names of the earlier authors and of Hübner especially. But the effect of this Canon would be to swamp our nomenclature with such terms as armati and hypati, argonautae and moderatæ, adoleocentes and terribiles, frugalia and voracia, and hundreds more equally absurd. And already we find the writings of Mr. Scudder defaced and obscured by them. This is making progress backwards, and in my opinion is as sensible as if we were to surrender the Indian numerals for the letters of Rome, or the notation of chemistry for the hieroglyphics of the alchemist, or railroads for buck-boards and pillions.

And although this Canon purports to relate only to groups higher than genera, the same reasons which would favor such an application cover genera also. And accordingly we find of late several entomological systematists wholly ignoring the Rule which requires definition of genera, and in the most reckless fashion indicating genera by the mere mention of types.

Of the 1,104 generic names in the Hist. Sketch, 283 are taken from the Verzeichniss bekannter Schmetterlinge, a work of which I propose to speak in a subsequent paper, and 57 are taken from the Tentamen and other works of Hübner, making a total of 340, or about 30 per cent. Scarcely one of all these can stand without displacing a name applied, with requisite definition and publication, by Doubleday, Boisduval, Westwood and other eminent authors, and the aggregate represents a vast sum of injustice.

NEW CALIFORNIAN AND TEXAN MOTHS.

BY LEON F. HARVEY, A. M., M. D., BUFFALO, N. Y.

(Concluded from February No., Page 38.)

Hadena Dunbari, n. s.

Eyes naked, tibiae unarmed, tufting of body obsolete, so that it approaches *oligia*, but is stouter than those species. Fore wings light gray, basal line black, distinct; t. a. line geminate, black outwardly and white inwardly, irregular; t. p. line geminate, produced above the reniform, curved outward, joining the reniform inferiorly. Median shade black, distinct. Orbicular round, white, with black annulus, with a dark centre; reniform subquadrate, black margined, having a carneous centre; claviform outwardly well expressed, concolorous, with a black border; s. t. line white, dentate, preceded by a black streak, obsolete opposite the reniform; an apical black streak. White dots on the costa in the s. t. space. Terminal line black, fringes concolorous and finely cut with white. Beneath cinereous; light outer border with terminal line well marked. Median shade quite evident on costa; alternate white and black costal marks. Hind wings smoky white, veins soiled, fringes

white. Beneath concolorous, a discal lunule, with median and terminal lines obvious. Body concolorous; collar with a black line; black line at base of thorax; beneath, thorax and legs of a lilac shade. Abdomen whitish brown.

Vancouver Island, No. 5582, Coll. Mr. Hy. Edwards. Named for Dr. George W. Dunbar, of Buffalo, a zealous collector.

Hadena chlorostigma, n. s.

Eyes naked. Thorax blackish brown, tufted, edged with black; collar brown; sides and dorsal surface of body tufted. Primaries black, tinged with green; basal half line greenish; t. a. and t. p. lines narrow, black, geminate, accompanied by pure white shadings. In the character of the median lines this species resembles *chalcedonia* and *versicolor*. Median shade noticeable, blackish. Orbicular spot round, concolorous, ringed with black; reniform subquadrate, green, moderate, bordered with black; claviform minute, black. Beneath blackish, pale, irrorate; straight median line; discal spot on the line; subterminal fuscous shade; white spots on the costa, near the apex. Secondaries smoky, black, beneath median line denticulate, followed by subterminal fuscous shade; fringes short, paler.

Expanse 22 m. m. May 22nd, No. 544, violet label; G. W. Belfrage, Texas.

Perigea niveirena, n. s.

This species is of a mottled fuscous with distinct black, single waved transverse lines; the small reniform outwardly white margined. Subterminal line white, dentate, preceded by a blackish shade. Hind wings fuscous, paler beneath, with even common shade line and discal spot. Body concolorous.

Expanse 30 m. m. Vancouver Island, No. 5621; California, No. 5199, Coll. Mr. Hy. Edwards.

Gortyna obliqua, n. s.

♂. Resembles the Eastern *G. nitela*, but the pale t. p. line is more oblique, angulated immediately on costa. The color is more reddish brown. T. a. line outwardly angulate on median vein, thence downwardly straightly to internal margin, thus narrowing the median space inferiorly. Stigmata visible, paler than the wing, rounded. Subterminal

line a light shade line, twice angulate, nearly opposite the cell and on inferior border. Subterminal space lighter than the stigmata. Hind wings pale, beneath with faint dot and line.

Expanse 36 m. m. No. 4410, California, Coll. Mr. Hy. Edwards.

This is the first Californian species congeneric with the Eastern species referred by Gueneé and Grote to *Gortyna*. The clypeal spine of *Ochria* is absent.

Caradrina flavimaculata, n. s.

♂. Wings elongate; primaries narrow, secondaries wide. Fore wings pale, fuscous with perpendicular, waved, darker transverse lines. Orbicular yellowish, small, rounded; reniform concolorous, small, with internal streak. A terminal series of black dots, preceded by a waved pale line. Hind wings pellucid white, with a terminal linear shade, soiled on the veins.

Expanse 30 m. m. Oregon, No. 6003; California, No. 3481. Coll. Mr. Hy. Edwards.

Graphiphora pulchella, n. s.

♀. Eyes hairy; head sunken; thorax untufted. Purple brown; terminal space lilac gray; costa shaded with lilac gray. Transverse lines dark, evident, denticulate; t. p. line geminate, forming a prominent series of points followed by gray dots; both lines followed by gray shades. Stigmata concolorous, edged with black and gray; orbicular sub-quadrate; reniform sub-equal, elongate, oval, slightly constricted at centre. Thorax purple brown. Hind wings and abdomen fuscous; beneath the wings are pale with a red flush, common lines and discal dots.

Expanse 33 m. m. No. 2921, California, Mr. Hy. Edwards' Coll. The handsomest species of the genus known to me.

Calymnia calami, n. s.

Antennae brown, palpi whitish, smaller winged and more slender than *orina*. Differs from it in the light yellow of the primaries. The median lines are trapezoidal, more nearly approaching each other at the inferior border, white with a dark shade internally. Reniform white margined, slight constriction externally. Orbicular round, small, with a white annulus; terminal line inconspicuous; fringes concolorous. Beneath of an ochreous shade, much like *orina*. T. p. line evident. Secondaries white, tinged with yellow, lines obsolete. Thorax and body concolorous

with primaries above ; legs of the color of the under surface of primaries.

Expanse 30 m. m. Violet label, Mr. G. W. Belfrage, Bosque Co., Texas.

Lithophane Oregonensis, n. s.

Allied to *Georgii*, but paler gray, with the orbicular slightly extended below median vein, in which respect it resembles *laticinerea*. Whitish gray ; a fine basal black line. The geminate, acutely dentate median lines apparent on costa. Reniform with red central shade, black ringed, incomplete ; cruciform black marks before the subterminal line apparent. Median shade noticeable on costa. Head and thorax whitish gray ; black lines on the outside of the tegulae. Hind wings fuscous, with lunule. Body fuscous, with a red tinge. Thorax and legs gray beneath. Front and collar with a black line. Beneath light fuscous, with a light red stain and very distinct lunule on hind wings.

Expanse 45 m. m. Oregon, No. 5600, Coll. Mr. Hy. Edwards.

Lithophane carbonaria, n. s.

♀. A species with naked eyes, flattened abdomen and with untufted thorax, with the sides angulated, but very different in color from any known species, looking distantly like *Macronoctua onusta*. Primaries dull black shading into brownish toward internal margin. Lines geminate, apparent as darker shades. Orbicular spherical, concolorous ; reniform medially constricted, showing some powdery pale scales lining the annulus and centrally. Subterminal line preceded by black dots superiorly, pale ; fringes brownish. Hind wings smoky fuscous ; beneath paler, irrorate, with discal lunule. Fore wings beneath showing costal white dots. Head, thorax and legs blackish.

Expanse 36 m. m. No. 4417, Mr. Edwards' Coll.; California.

Thalpochares elegantula, n. s.

White. Primaries slightly yellowish, with a median brown line edging inwardly a brown fascia with a purple shade, and which encloses the round black edged reniform mark. Traces of the t. p. line beyond this may be made out. Apices and fringe touched with brown. Hind wings and body white ; beneath the fore wings are smoky.

Expanse 18 m. m. No. 2579, Nevada, Mr. Hy. Edwards' Coll.

I hardly think December in Buffalo has ever been known to produce moths, yet I have to record the capture, on the 21st of December last, of a specimen of *Orgyia leucostigma*, by Miss Mary Walker, probably the contents of a late fall chrysalid, urged to escape by the unusual warm weather of the season.

ON GENERA AND THE LAW OF PRIORITY.

BY A. R. GROTE,

Director of the Museum, Buffalo Society Natural Sciences.

The writers who are engaged in the work of giving us an account of the different kinds of Butterflies and Moths inhabiting North America, seem to fall into two categories with respect to their ideas of classification. As in other departments of Natural Science, the Entomologists differ principally in their conception of what constitutes a genus. They are either *lumpers*, making their genera very wide, or *splitters*, making their genera restricted and dependent upon less conspicuous details of structure. And the different writers display as many phases of the two ideas, so that, with respect to any one individual, we may not certainly classify him without attention. Feeble *lumpers* may be recognized by their admittance of a few more obvious genera even when these have been proposed by representative *splitters*. Feeble *splitters* may be known by their admission of sub-genera, or sub-generic divisions. Again, the *lumpers* may be divided into *intelligent lumpers*, who, for the most part, may be aware of the minutest differences in structure offered by the objects of their studies, but who fail to consider these differences as worthy of expression in generic nomenclature; and *unintelligent lumpers*, who fail in perception and in knowledge alike. Numerically speaking, the *lumpers* are in the ascendant, perhaps in the proportion that it is easier to appreciate general resemblances rather than minute agreements. As the rule, it is the *lumpers* who attack, but, strange to say, it is not so much the method of the *splitters* that they attack by a display of argument drawn from fact, but the application of zoological rules of nomenclature and the operation of the law of priority in scientific writing. As a rule,

the *splitters* have here the advantage from their more extended reading. With them it was a greater necessity that their more numerous genera should be correctly named, and they have been at pains to adopt from older writers, like Hübner, all the generic names they could legitimately use under the received zoological rules of the British Association. A want of comprehension of these rules which seems almost deliberate, has induced Mr. Strecker to attack the term *Cressonia*, now in use for *juglandis*, one of our Phalaenoid Sphinges, under the plea that it is synonymous with *Polyptichus*, whereas it was *originally* shown that *juglandis* was included with *all* the eyeless Phalaenoid Sphinges known to Hübner, and that, when it was found to differ from *all* of these, a different term was properly proposed for it, leaving *Polyptichus* to be used for one or more of the species included under it in the Verzeichniss. This by way of illustration.

With regard to the attack on the law of priority, or rather, its application by the *splitters*, this much seems reasonable, that, if its application defeats the end of Entomology, which is to give us exact knowledge of our insects, it must be modified or abandoned. To write merely to vindicate an application of any code of rules at the risk of confusing the study for the furtherance of which such rules have their excuse for existing, cannot be defended. If the law of priority cannot be extended so as to include Hübner, without endangering the study of Entomology, it would be advisable to drop Hübner.

The real contest does not seem to us to be about Hübner, although Hübner and his generic names and ideas have afforded the most popular, if not the most vulnerable point of attack to the *lumpers*. It is rather between the sets of ideas which we have described with regard to the value of genera. To illustrate: The N. Am. Phalaenoid Sphinges have been divided among the genera *Smerinthus*, *Paonias*, *Calasymbolus*, *Amorpha* and *Cressonia*. Objections are made against the use of Hübner's terms as here applied. Would it be any advantage to have ignored these and substituted new or different ones? Obviously, not. These terms are then as good as any others, provided they are to stand at all. And now let us look without impatience at these genera. What is the question which at this time is *the* question among naturalists. Is it not rather the question of how all these different species and genera came about, rather than a mere cataloguing of them for convenience sake? And will not, therefore, any system of classification which expresses more clearly the inter-relationship through slight modifications of structure, be the classifi-

cation which thinking men will adopt? Now, in ignoring these slight modifications of structure in the case of the Phalaenoid Sphinges, we should have to lose sight of the fact that at least three of the American genera have no representatives in Europe, that the European *ocellatus* is represented in America by strictly congeneric species; both of these facts, which seem to us of great importance to know, would be obliterated by a lumping of the species indiscriminately under one generic name. In the case of one of these genera, *Cressonia*, it is known that it was incorrectly held by Dr. Clemens to represent the European *populi*, that the correction has been made, that its right to a separate consideration has been made plain. What is to be gained toward the solution of the great question of the development or origin of these species by overturning this work? Are we not able, indeed, to grapple with this question at a better advantage when we know all the facts in the case, than when our classifications are so deceptive as to embrace different kinds of structure under a common generic name? The mental operation by which we recognize "genera," is evidently the same kind as that by which we recognize "species." Both of these are alike abstract conceptions; they have the same basis for existing in our minds and books.

In so far as the new generic ideas seem a development of the old, and in consonance with our increase in knowledge, we may trust to them. It is well also that the *lumpers* have their say and full weight; for undoubtedly extreme cases of splitting have to be corrected, and extreme applications of the rules of priority have to be rejected as leading to no useful results to science, which should be the criteria for all scientific action. And with all these varying counsels we still can be reasonable with each other in our common cause; imputing no evil and overcoming each one his own unreasonableness so far as he is able. An adverse criticism from which there will be no appeal may fall on those of us who do not recognize the current scientific thought, but waste their opportunities in useless controversies, showing no appreciation of the scientific value of Entomology.

ENTOMOLOGY AT THE CENTENNIAL.—The Entomological Society of Ontario has forwarded a very fine collection of Canadian insects to Philadelphia, consisting of eighty-six cases, forty-five of which are Lepidoptera and twenty-seven Coleoptera, the remainder being occupied by the other orders.

CORRESPONDENCE.

ENTOMOLOGICAL NOTES FROM THE COUNTY OF PETERBORO, ONT.

DEAR SIR,—

As no work, or but very little, can be carried on at this season out of doors, in aid of the objects you have in view in the publication of the CANADIAN ENTOMOLOGIST, I forward a few extracts from my note book of last year.

April 5th, 1875, I captured a fully developed specimen of that very troublesome butterfly, *Pieris rapæ*, in my garden, the thermometer having been only 1° above the freezing point on the preceding night, and not having risen beyond 38° during the entire day.

The *Pieris* was not nearly so destructive to my plants in 1875 as it was in the previous year, inasmuch as in the fall of that year I had discovered and destroyed some hundreds of chrysalids that had attached themselves to the inside of the doors and walls of my tool-houses, and beneath my verandah-roof. In 1874 my cauliflowers and cabbages, during my frequent absence from home, were well nigh eaten up by this garden pest, and such as were not actually devoured were rendered unfit for use by the quantity of excrement deposited between the leaves of the plants. A sprinkling of buckwheat flour was suggested as a remedy, but I tried it without effect.

May 16. The mischievous flying and hopping *Haltica striolata* was swarming in my melon-frames. I dusted the plants with soot, which appeared to disagree with their constitution and prevented their effecting any material damage. I have sometimes tried sprinkling the plants with tobacco water, which forces them to retire to the outside of the frame, where they can readily be destroyed before they recover from the effects of the tobacco.

May 24. The first Potato Beetle, *Doryphora decem-lineata*, made its appearance—not on my potato plants, for, since the advent of that interesting "bug," I have preferred purchasing to growing potatoes—but on my egg-plants and tomatoes, both of which plants belong (or rather *belonged*, for the tomato is now *Lycopersicum esculentum*) to the *Solanums*, as does the potato. I have generally found that where potatoes and egg-plants are grown in the same garden, the Colorado beetles attack the

latter with even greater voracity than they do the former. My remedy, as regards the egg-plants, is hand-picking two or three times a day, a remedy where, from the size of the garden, it can be adopted, the most efficacious that can be devised.

June 5. The *Nematus ventricosus* appeared upon the currant bushes. A watering with hellebore and water proved, as usual, an unfailing specific.

June 16. I captured an *Elater occulatus*.

June 19. *Sesia diffinis*.

June 24. *Saturnia io*, ♂, 2¾ inches in expanse.

July 4. The Fireflies, *Lampyris corusca*, first appeared, enhancing, by their glittering, glancing evolutions, the charms of the evening hours.

July 10. I captured a *Saperda tridentata*.

August 17. *Buprestis Virginica*.

August 19. Camping out with a party on one of the granitic islands of our most beautiful and romantic Stony Lake. Saw a large number of those exquisite little beetles, the *Chrysochus auratus*.

August 20. Red Admiral butterfly, *Vanessa atalanta* (Westwood).

August 26. *Arge* tiger-moth.

August 28. *Silpha vespillo* (Samouelle).

August 30. *Buprestis dentipes*.

September 5. I captured in my garden a good specimen of that very lovely moth, *Deiopeia bella*.

September 20. Found a common cricket, *Acheta abbreviata*, with a hair snake, *Gordius*, attached to it. Whenever the unhappy victim moved the snake appeared to lash itself into a perfect fury, twisting itself around the cricket in all directions.

October 20. I found a chrysalis of the Five-spotted Sphinx, *Sphinx quinquemaculatas*, which I now have by me still alive.

On the same day, the thermometer on the preceding night having run down to 32°, I captured a brilliant specimen of *Vanessa progne*.

October 21. Dug up in my garden a quantity of grasshoppers' eggs enclosed in a pellicle of dried varnish.

VINCENT CLEMENTI, B. A.

Peterboro, January 28th, 1876.